

Newton's third law

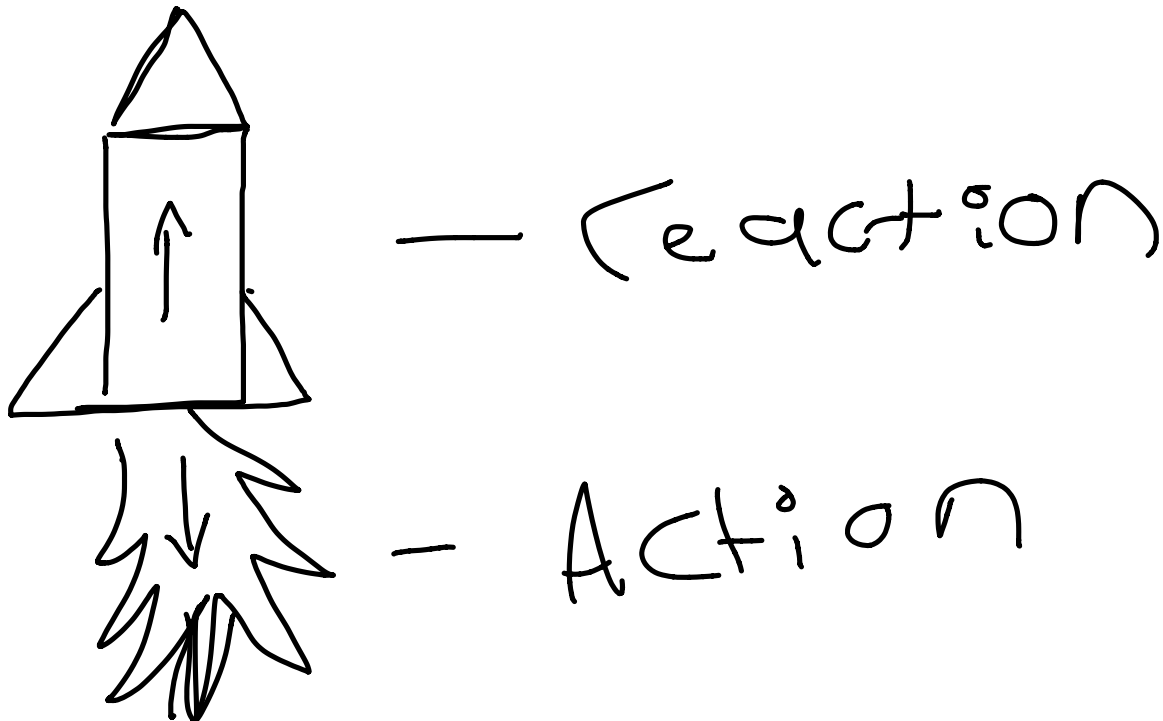
- forces ALWAYS come in pairs...action and reaction
- For every action there is a reaction Different object
- Interaction between the two objects
- The two forces= in magnitude but opposite in direction
different action and reaction vector pairs

Forces in Pairs

- the action reaction pair don't cancel each other out
- why?
- They are acting on different objects
- Forces only cancel if they act on the same object

Action-reaction of a Rocket

- the hot gas moves away from the force of the rocket
- the rocket moves away from the force of the gas molecules
- action gas moving away reaction rocket moving away
- forces equal but is acceleration equal?-yes because
action= equals + opposite reaction



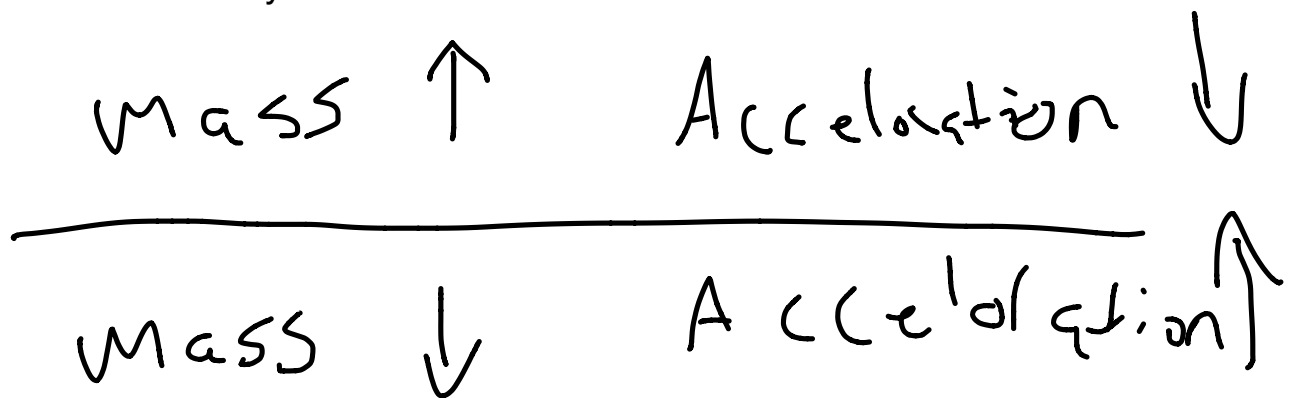
Action - reaction pairs

- Ignition of cannon ball acts on the cannon
- the cannon reacts to the ignited cannonball

-friction and weight cause the cannon ball to get greater speed how ever its the same amount of force

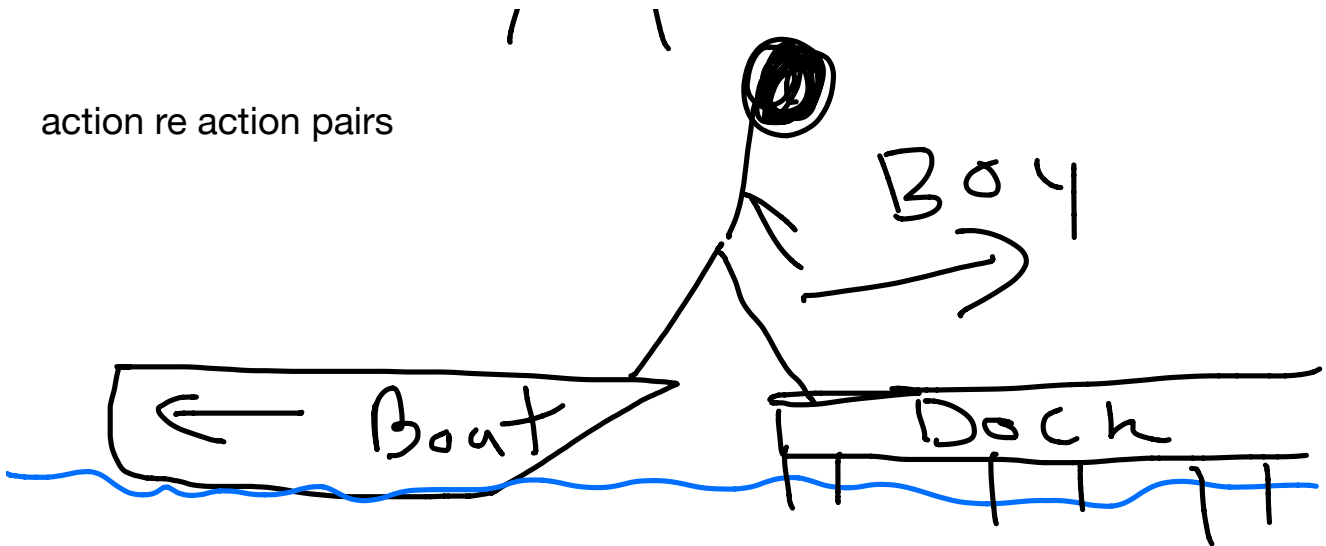
Action + reaction - Mass

- Mass size impacts acceleration
- when force stays the same and...



$$a = \frac{F}{M}$$

action re action pairs



Equal and opposite forces

- forces equal and opposite does motion occur
 - Yes
- Equal and oppisit forces oporate on different objects
- net force = 0 forces must be on the same object

Reaction pair guidelines

- Both always there when there is a force
- they always are equal strenght
- they act in opposite direction
- always act on different objects
- both can cause acceloration

